BOSTON UNIVERSITY

the CATCH HEAT PROJECT

COMMUNITY ADAPTATIONS TO CITY HEAT

cityClimateHealth Tool

A statistical R-package to calculate health outcomes, including the impacts of extreme heat, and to identify vulnerable subgroups using health data in cities.

Weather exposure

Example:
Daily maximum temperature

Health data and analysis

Example:
Daily all-cause ED visits

Local findings

Neighborhoods and populations at a higher risk

WHAT IS THE TOOL?

It can analyze acute health outcomes from weather exposures (e.g., heat, cold, floods, and power outages). By addressing gaps that obscure the true health impacts on city residents, it identifies where and who is at greatest risk, informing targeted local interventions.

HOW DOES IT WORK?

Input daily time-series data on weather exposure (e.g., daily temperatures) and a health outcome (e.g., daily mortality). The R package predicts the relative risk of health outcomes and estimates acute health impacts from weather exposure by location and demographic.

REAL WORLD EXAMPLE

The tool was used in collaboration with the U.S. National Public Radio (NPR) to estimate the true number of deaths associated with heat every year across the United States. The analysis estimated that heat deaths were five times higher than had been previously reported.



catchcityheat.org/cityclimatehealth-tool

Funded by: wellcome

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The tool addresses several gaps!



Gap 1: Cities undercount the true burden of heat.	**Gap 2:** Cities want to know who is most vulnerable to heat
Gap 3: Cities need data on the scale that they can act on.	**Gap 4:** Confidentiality of health data can create analytical challenges.



Expertise needed

- Familiarity with R
- Ability to manage sensitive health data
- Statistical background knowledge

Who can use it?

- Anyone familiar with R
- Public health departments
- Researchers with health data
- Analysts conducting local case studies

Daily exposure
e.g., maximum temperature by municipality + date

Daily outcome
e.g., all-cause ED visits by municipality + date

Population
e.g., residents by place, age, + race/ethnicity

Spatial data
e.g., municipal boundaries + neighboring municipalities

cityClimateHealth

Relative risk

Attributable visits

Rates + subgroup comparisons

Read more about the tool!

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